

Ergonomic Assessment



High Gear Valve Disassembly

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Findings

Finding #1

Awkward posture. Bending over component to install clamp (approx. 80 degrees). Arms extended out in front of body over the valve casing.

Finding #2

Ulnar deviation while installing clamp and maneuvering large valve.



Findings

Finding #3

Awkward posture (similar to finding #1). Bending over component to install clamp (approx. 80 degrees). Arms extended out in front of body over the valve casing.

Finding #4

Ulnar deviation while installing lifting sling around valve case (similar to finding #2).

Finding #5

Force (back and upper extremities) used to lift valve case to install lifting sling.



Risk Factor Analysis

	Posture	Force	Compression	Cold Temp	Repetition
Neck	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5		
Back	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	(May Be a Problem During Cold Weather)	
Shoulders/ Upper Arms	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5		
Elbows/ Forearms	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5		
Wrists/ Hands	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5		
Hips/Thighs/ Knees/Legs	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5		
Ankles/ Feet	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5		

Solutions

- Use hydraulic pallet jack to easily transfer valve to hydraulic lift table. This will bring work closer to body and prevent awkward postures and overextensions.
- Valves should be delivered upright to limit ulnar deviation during clamp installation and sling attachment.
- Supply employee with orthotic shoe inserts to prevent leg fatigue and increase comfort in cold weather.



Summary

Finding	Recommendation
Awkward posture. Bending over component to install clamp (approx. 80 degrees). Arms extended out in front of body over the valve casing.	Use Hydraulic lift table to bring valve into the strike zone.
Ulnar deviation while installing clamp and maneuvering large valve.	Valves should be delivered upright to limit ulnar deviation during clamp installation and sling attachment.
Awkward posture (similar to finding #1). Bending over component to install clamp (approx. 80 degrees). Arms extended out in front of body over the part.	Valves should be delivered upright to limit ulnar deviation during clamp installation and sling attachment.
Ulnar deviation while installing lifting sling around valve case (similar to finding #2).	Valves should be delivered upright to limit ulnar deviation during clamp installation and sling attachment.
Force (back and upper extremities) used to lift valve case to install lifting sling.	Use Hydraulic lift table to bring valve into the strike zone. Also supply employee with orthotic shoe inserts to prevent leg fatigue and increase comfort in cold weather

Conclusions

- The task requires poor neck, back, and upper extremity postures.
- Worker had back injury due to old procedure.
- Recommendations have been implemented to prevent future injuries.



QUESTIONS

